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**REMARKS****I. Procedural Status of Application**

The Office Action inconsistently identifies the rejections as being non-final and final. It is Applicants' understanding that the Office Action is non-final, and this response is prepared according to that understanding. More specifically, the Office Action Summary indicates that the action is non-final. In addition, this is the first Office Action issued in response to the Request for Continued Examination filed on December 20, 2002, which included a Preliminary Amendment that raised new issues. Therefore, it appears that a final Office Action would be procedurally inappropriate. However, paragraph 12 of the Office Action indicates that the rejection is made final. Because paragraph 12 is inconsistent with the Office Action Summary, and is procedurally inappropriate, this response is being filed with the understanding that the Office Action is non-final.

Claims 1-13, 15-20, 44, and 55 are all the claims pending in the application. Claims 47, 48, 50, 51, and 53 are cancelled above. Claim 55 is added. Claim 44 is allowed. Claims 1-13 and 15-20 stand rejected on prior art grounds. Applicants respectfully traverse these rejections based on the following discussion.

**II. The Prior Art Rejections**

Claims 1, 4, and 7-10 stand rejected under 35 U.S.C. §102(b) as being anticipated by Yamanaka. Claims 2-3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamanaka. Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamanaka in view of Uesugi et al. Claims 6, 11-13, 15, 16, and 18-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamanaka in view of Pfister. Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamanaka in view of Pfister and further in view of Uesugi et al. Applicants respectfully traverse these rejections based on the following discussion.

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Prior to discussing the specific deficiencies of these rejections, Applicants note that independent claims 1, 11, 44, and 55 should all be in condition for immediate allowance. More specifically, independent claim 44 has been allowed and independent claim 1 has been amended to include the novel aspect of the channel extending into the source/drain regions from allowed claim 44. Independent claim 11 has been amended to define specific structures of the gate dielectrics and source/drain dielectrics that cannot be found in the prior art. Further, newly added claims 55 defines a single crystal channel region that has a different orientation than the substrate, which could not have been formed using any of the teachings of the prior of record. Therefore, as shown in greater detail below, it is Applicants' position that all the independent claims of the application should be in condition for immediate allowance.

**A. The Rejections Based on Yamanaka**

Applicants note that neither Yamanaka nor any of the other applied prior art references teach or suggest the invention defined by independent claim 1. More specifically, independent claim 1 defines "wherein said channel region includes an extension into said source and drain regions."

Yamanaka teaches a substantially rectangular channel region 4 as shown in Figure 1B and therefore cannot teach or suggest that "said channel region includes an extension into said source and drain regions" as defined by independent claim 1. Therefore, it is Applicants position that Yamanaka does not teach or suggest the invention defined by independent claim 1 because Yamanaka does not teach or suggest "wherein said channel region includes an extension into said source and drain regions" as defined by independent claim 1. Therefore, independent claim 1 is patentable over Yamanaka and dependent claims 2-4, 7-10, and 53 are similarly patentable. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of claims 1-4, 7-10, and 53.

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**B. The Rejection Based on Yamanaka in view of Uesugi et al.**

The Office Action makes reference to Uesugi for the limited purpose of showing a planar structure. However, Uesugi is not referenced (and does not teach) the deficiencies of independent claim 1 that are mentioned above. More specifically, Uesugi does not teach or suggest "wherein said channel region includes an extension into said source and drain regions" as defined by independent claim 1. Therefore, even if one ordinarily skilled in the art had combined Yamanaka with Uesugi, the proposed combination would not teach or suggest the invention defined by independent claim 1. Therefore, independent claim 1 and dependent claim 5 are patentable over the proposed combination of references. In view the forgoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

**C. The Rejection Based on Yamanaka in view of Pfister**

With respect to the rejection of independent claim 11, which defines that the "thickness and material selection of said first gate dielectric and said second gate dielectric is independent of said source and drain dielectrics." Applicants note that neither Yamanaka nor Pfister teach or suggest such a structure. More specifically, in Yamanaka the gate dielectrics 31, 32, 51, 52 are the same dielectrics that separate the source and drain from the gates and cannot present a situation where the "thickness and material selection of said first gate dielectric and said second gate dielectric is independent of said source and drain dielectrics" as defined by independent claim 11. Similarly, in Pfister the same dielectric 28 is used to separate the gate 26 from the source and drain regions 18.

Therefore, since both Yamanaka and Pfister use the same materials and layers as gate dielectrics and source and drain dielectrics, they cannot teach or suggest that the "thickness and material selection of said first gate dielectric and said second gate dielectric is independent of said source and drain dielectrics" as defined by independent claim 11. Therefore, independent claim 11 is patentable over the proposed combination of Yamanaka and Pfister.

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Further, as shown above, Yamanaka does not teach or suggest "wherein said channel region includes an extension into said source and drain regions" as defined by independent claim 1. Pfister suffers from the same lack of teaching. More specifically, there is no structure illustrated in Pfister that would teach or suggest "wherein said channel region includes an extension into said source and drain regions" as defined by independent claim 1. Therefore, independent claim 1 is similarly patentable over the proposed combination of Yamanaka and Pfister.

Thus, it is Applicants' opinion that independent claims 1 and 11 are patentable over the proposed combination of Yamanaka and Pfister. Further, dependent claims 6, 12, 13, 15, 16 and 18-20 are also patentable, not only because they depend from a patentable independent claim, but also because of the additional features they define.

**D. The Rejection Based on Yamanaka, Pfister and Uesugi et al.**

The Office Action makes reference to Uesugi for the limited purpose of showing a planar structure. However, Uesugi is not referenced (and does not teach) the deficiencies of independent claim 11 that are mentioned above. More specifically, Uesugi does not teach or suggest that the "thickness and material selection of said first gate dielectric and said second gate dielectric is independent of said source and drain dielectrics" as defined by independent claim 11. Therefore, even if one ordinarily skilled in the art had combined Yamanaka and Pfister with Uesugi, the proposed combination would not teach or suggest the invention defined by independent claim 11. Therefore, independent claim 11 and dependent claim 17 are patentable over the proposed combination of references. In view the forgoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

**III. New Claim 55**

With respect to the primary references Yamanaka and Pfister, Applicants note that neither teaches or suggests a structure where "the crystal orientation of said single crystal channel is independent of said crystal orientation of said substrate" as defined by

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newly added claims 55, or any process for making such a structure. More specifically, because the invention uses a bonding process to attach the single crystal channel material, the orientation of the single crystal channel material is completely independent of the substrate structure to which it is bonded.

To the contrary, Pfiester forms the silicon layer 16 over the dielectric 14 (column 3, lines 37-40) and does not perform any bonding process. Because the silicon layer 16 is formed over the dielectric 14, it cannot comprise single crystal silicon because there is no seed material from which to grow the single crystal silicon within the dielectric 14. Further, if Pfiester is modified to grow single crystal silicon, this growth could only be from the underlying substrate which requires that the channel layer have the same orientation as the substrate.

Similarly, Yamanaka grows amorphous silicon film 40 and then crystallizes a portion of this amorphous silicon film to form the active area of polycrystalline silicon film (column 7, lines 30-35). Therefore, Yamanaka requires the use of a polycrystalline silicon film and cannot teach or suggest the claimed single crystal silicon channel of the inventive structure.

Therefore, Applicants respectfully submit that newly added claim 55 is also patentable over any combination of Yamanaka and Pfiester.

#### **IV. Formal Matters and Conclusion**

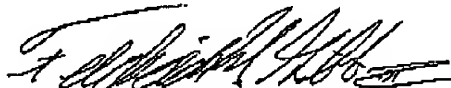
In view of the foregoing, Applicants submit that claims 1-13, 15-20, 44, and 55, all the claims presently pending in the application, are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

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Please charge any deficiencies and credit any overpayments to Attorney's Deposit  
Account Number 50-0510.

Respectfully submitted,



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